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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/916,305	07/30/2001	Yutaka Wada	2001-1079	9053

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WASHINGTON, DC 20006-1021

EXAMINER
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MCDONALD, SHANTESE L

ART UNIT	PAPER NUMBER
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3723

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 09/916,305	<b>Applicant(s)</b> WADA ET AL.	
	<b>Examiner</b> Shantese L. McDonald	<b>Art Unit</b> 3723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 12 November 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) 1-3,5-8,54-60,65-67,74,76,82-88,93-95,99 and 101-106 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 1-3,5-8,74,76,99 and 101-106 is/are allowed.
- 6) ☐ Claim(s) 54-58,65-67,82-86 and 93-95 is/are rejected.
- 7) ☐ Claim(s) 59,60,87 and 88 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/10/01</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

Claims 56 and 84 are rejected as being product by process claims.

Claim 59 recites the limitation "the dresser" in line 1. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 54-58,65,66,82-86,93 and 94 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng et al. in view of Berman.

Cheng et al. teaches a method for polishing an object, 10, which is a substrate which can have raised and depressed patterns, (col. 1, lines 23-28), using an abrading surface which is an abrasive plate, made of nickel based diamonds, (col. 9, lines 47-50), and a binder, (col. 6, lines 33-35), or a quartz glass substrate of a ceramic substrate, (col. 12, lines 4-13), and dressing the abrasive surface, which comprises pressing and rotating the dressing tool against the abrading surface and removing residual particles from the abrading surface, (col. 8, lines 59-62), pressing the substrate against the abrading surface, and polishing the object, (col. 5, line 63-col. 6, line 3).

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Cheng et al. also teaches that the dressing can be conducted while the polishing is being conducted, and during this polishing/conditioning, water is supplied, (col. 4, line 23), and the pressure between the abrading surface and the dresser is less than 100 g/cm<sup>2</sup>, (col. 12, lines 1-3). Cheng et al. teaches all the limitations of the claims except for the method of dressing an object prior to a polishing process, the dresser being a brush, the surface roughness of the abrading surface being  $\pm 30\mu\text{m}$  after the dressing process, the ratio of the abrasive particles and a material of the binder being 1:x, the diamond dresser having diamond particles of #100 and #200 size and the polishing process being conducted while supplying a liquid not containing abrasive particles. Berman teaches a method of dressing an abrading surface, prior to a polishing process, (col. 9, lines 16-31), and that the dresser can be a brush, (col. 4, lines 29-31). It would have been obvious to one having ordinary skill in the art at the time the invention was made, to provide the method of Cheng et al. with a preconditioning step, and utilizing a brush, as taught by Berman, in order to enhance the abrading surfaces, polishing capabilities.

It would have been further obvious to provide the invention of Cheng et al. with the limitations of the surface roughness of the abrading surface being  $\pm 30\mu\text{m}$  after the dressing process, the ratio of the abrasive particles and a material of the binder being 1:x, the diamond dresser having diamond particles of #100 and #200 size and the polishing process being conducted while supplying a liquid not containing abrasive particles, in order to vary the abrasive quality of the abrading surface, and the dresser, and since it has been held that where the general conditions of a claim are disclosed in

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the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

In reference to supplying a liquid not containing abrasive particles, it is an old and well known fact in the art, that when polishing using a fixed abrasive polishing pad, the slurry used does not contain abrasives.

Claims 67 and 95 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berman in view of Brown et al.

Berman teaches all the limitations of the claims except for applying an ultrasonic energy to a fluid on the abrading surface. Brown teaches applying an ultrasonic energy to a fluid on the abrading surface, (col. 4, lines 45-67). It would have been obvious to one having ordinary skill in the art at the time the invention was made, to provide an ultrasonic energy to the surface of Berman, as taught by Brown, in order to enhance the particle dispersion and removal of the dressing process.

#### ***Allowable Subject Matter***

Claims 59,60,87 and 88 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 1-3,5-8,74,76,99 and 101-106 are allowed.

#### ***Response to Arguments***

Applicant's arguments with respect to claims 54-58,65-67,82-86 and 93-95 have been considered but are moot in view of the new ground(s) of rejection.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shantese L. McDonald whose telephone number is (703) 308-8722. The examiner can normally be reached on 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Hail can be reached on (703) 308-2687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Joseph J. Hail, III". The signature is fluid and cursive, with a stylized "J" and "H".

S.L.M.  
January 19, 2005

Joseph J. Hail, III  
Supervisory Patent Examiner  
Technology Center 3700